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## FIFTEEN YEAR SURVEY OF SANATORIUM CASES

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During the past fifteen years the white tuberculosis death rate in Delaware has decreased approximately fifty per cent. Coincidental with this decrease, one is led to believe that the incidence of infection is reduced proportionately, as well as a reduction of the number of new cases developing the disease. The early diagnosis campaigns, health programs, publicity, clinics for the

checking of all available contacts, supervision of known cases, as well as group tuberculin testing have aided materially in this reduction of mortality.

With the above in mind, it was thought it may be of interest to tabulate the tuberculous admission and discharges of the Brandywine Sanatorium during the past fifteen years, to determine whether or not cases were in the more favorable stage of the disease on admission, and also whether the discharged cases showed a higher percentage in the "improved" classification, each following year.

The following table gives this summary:

\*Superintendent, Brandywine Sanatorium.

July 1st to July 1st	Admitted				Discharged			Surgical Treatment:			Average Length of Stay	State Death Rate (White) Calendar Year	Number of Deaths in State Calendar Year
	Total Number	%			Total Number	%		Total Number	%				
		Minimal	Mod. Adv.	Far Adv.		Improved	Unimproved and Died		Improved	Unimproved and Died			
1925-26 .....	70	8	47	45	69	37	63	0			34	74	148
1926-27 .....	71	13	39	48	75	48	52	0			112	84	170
1927-28 .....	61	10	36	54	49	32	68	1		100	127	70	141
1928-29 .....	74	4	55	41	67	54	46	2	50	50	65	65	131
1929-30 .....	90	6	46	48	69	53	47	4	75	25	76	66	135
1930-31 .....	76	5	40	55	50	36	64	1	100	0	178	60	103
1931-32 .....	63	6	30	64	49	48	52	5	100	0	242	65	135
1932-33 .....	55	9	27	64	46	47	53	6	33	67	393	52	108
1933-34 .....	45	9	22	69	35	51	49	6	67	33	368	55	116
1934-35 .....	63	13	19	68	49	54	46	14	79	21	491	47	95
1935-36 .....	42	7	19	74	42	57	43	15	73	27	664	46	93
1936-37 .....	79	10	33	57	55	51	49	18	73	27	530	37	75
1937-38 .....	72	8	33	59	64	49	51	15	80	20	512	41	84
1938-39 .....	94	17	14	69	99	47	53	26	58	42	485	36	78
1939-40 .....	92	9	25	66	96	52	48	34	61	39	369	42	89
	1047				914			147					

The admissions show very little, if any, change from year to year. There is, however, a discrepancy in comparing the moderately advanced and far advanced cases prior to 1931, as against the same classification of the cases after 1931. This discrepancy is undoubtedly due to the fact that the Sanatorium had no x-ray facilities prior to 1931, and the majority of the stages of the disease were ascertained by physical examinations, in which event there were cases classified as moderately advanced, due to the extent of their lesions, who would on x-ray show cavities sufficiently large to classify the case in the far advanced stage.

Comparing the minimal admissions in five-year periods, we find practically no change. In the first five-year period eight per cent were admitted; in the second five-year period eight per cent were admitted; and in the third five-year period ten per cent were admitted. We feel this slight increase in the admission of minimal cases in the last five-year period is due entirely to our tuberculin testing program, as during the past five

years, we have been able to test a higher percentage of the adolescent age groups.

When we consider the moderately advanced group in five-year periods, after x-ray facilities were obtained (1931), we find twenty-eight per cent were admitted from 1931 to 1936, while twenty-five per cent were admitted from 1936 to 1940.

Considering the far advanced group from 1931 to 1936, sixty-four per cent were admitted, while the second five-year period showed sixty-five per cent admitted, which variation is so slight that no conclusions can be drawn as to any improvement in the patients on admission from year to year, therefore, with this reduction in the death rate, the sanatorium is not receiving patients having the more favorable stages of the disease, to correspond coincidentally with this mortality reduction.

When we come to consider the discharged cases, the following table has the stages broken-down more into the various stage grouping.

July 1st to July 1st	DISCHARGED CASES														
	Total Number	%									Surgical Treatment				
		Improved			Unimproved			Died			%				
		Min.	Mod. Adv.	Far Adv.	Min.	Mod. Adv.	Far Adv.	Min.	Mod. Adv.	Far Adv.	Total Number	Mod. Adv.	Far Adv.	Mod. Adv.	Far Adv.
1925-26 .....	69	4	23	10	3	13	12	0	0	25	0				
1926-27 .....	75	7	29	12	2	11	15	0	0	24	0				
1927-28 .....	49	6	16	10	0	8	12	0	5	43	1				100
1928-29 .....	67	9	37	8	0	8	9	0	4	25	2		50		50
1929-30 .....	69	7	39	7	0	4	9	0	3	31	4	25	50	25	
1930-31 .....	50	6	22	8	0	4	24	0	8	28	1		100		
1931-32 .....	49	12	24	12	0	2	18	0	6	26	5	20	80		
1932-33 .....	46	11	28	8	0	0	18	0	4	31	6		33		67
1933-34 .....	35	6	28	17	3	0	20	0	6	20	6	33	33	33	
1934-35 .....	49	16	22	16	0	0	10	0	0	36	14	36	43	7	14
1935-36 .....	42	12	31	14	0	0	12	0	0	31	15	40	33		27
1936-37 .....	55	7	15	29	0	0	18	0	0	31	18	6	67	11	16
1937-38 .....	64	8	27	14	0	5	14	0	3	29	15	40	40	7	13
1938-39 .....	99	11	22	14	1	0	18	0	2	32	26	31	27	12	30
1939-40 .....	96	9	15	28	0	4	17	0	1	26	34	15	46	12	27
Totals .....	914										147				

Referring to table No. 1 one will note that the percentages show very little variation from year to year. Taking them again in the five-year period, the first five-year period showed forty-five per cent improved on discharge; in the second five-year period there were forty-seven per cent improved on discharge; while in the last five-year period there were fifty-one per cent improved, which does show a slight improvement in the status of the discharged patients in five-year groups.

The cases receiving surgical treatment are included in the total number of discharged cases, and one will note that of those cases receiving surgical treatment, the percentage of the improved cases on discharge is uniformly better than the total number, which probably explains the reason for the slightly higher percentage of improved cases on discharge from year to year.

Regarding a comparison of the average length of stay of the individual case with the condition on discharge, it appears that no definite conclusions can be drawn.

#### CONCLUSIONS:

Even though today we have a reduction of half the number of deaths from tuberculosis in the state, as compared to fifteen years ago, the admission of cases to the sanatorium shows that cases coming under treatment are not in the more favorable stage of the disease than those admitted in previous years. On cases discharged from the sanatorium, there may be a slight increase in the total of discharged cases classified "improved," and if true, believe this can be accounted for by the increase in the number of cases receiving some form of surgical treatment.

#### THE CONTROL OF TUBERCULOSIS FROM THE POINT OF VIEW OF A COUNTY HEALTH OFFICER

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I have nothing to offer in this paper that is not well known by every practicing physician and public health worker, but I think it well sometimes to be reminded of some perfectly obvious things.

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Notwithstanding the fact that the death rate from tuberculosis has declined steadily in Delaware since 1916, it is still a major problem and by far the most expensive one with which we have to deal. Of the money appropriated by the state for health purposes 64.7% is appropriated specifically for the tuberculosis program, that is, for Brandywine and Edgewood Sanatoria. This does not include the cost of work done by the County Health Units, the Laboratory, or the money spent by the State Anti-Tuberculosis Society.

This high cost, of course, is due to the fact that in order to isolate these patients it is necessary for the state to assume the cost of their maintenance, as well as their medical and nursing care. During the year 1938, which is the last year for which records are available, 144 new active cases of tuberculosis were reported in the state. Each one of these cases becomes a focus of infection, particularly in the immediate family, and it has been proven by the tuberculin testing, which has been done in the state, that most all the active cases picked up by this means were or had been close contacts of active cases.

If it were possible to get these cases early and isolate them as completely as we would smallpox, for instance, the problem would be very much simplified. Obviously in very many cases this is impossible but it seems to me that this should be our objective.

To this end, if the physician would avail himself of the modern means of accurate diagnosis which are at hand, in every doubtful case report the case promptly and enlist the help available through the State Board of Health, together we can attack the problem intelligently.

This leaves a group of patients who fail to consult the physician until the disease is far advanced, and those who refuse to co-operate even when they know they have the disease. Many of these cases are found by our public health nurses.

Then, too, the question of housing is quite a problem. To find an active case of tuberculosis in a family of six, eight or ten living in two or three rooms is a most discouraging experience, particularly so if it is a colored family and the person has to be put on a wait-



ing list of months duration. This condition, we hope, will be remedied with the completion of the new Edgewood building.

There is still a place for education in the tuberculosis program. It seems to me that because of the fact that deaths from and cases of tuberculosis are considerably fewer than was the case a few years back, the general public has concluded that the problem has been solved, but if the fact is gotten over to them that every case is a source of infection and that every person who is a contact is endangered, the public will insist that each suspected person seek medical aid at the earliest possible moment. Our nurses, through their contact with homes, are able to locate many cases and get them under treatment.

#### SUMMARY

The physician should take advantage of modern means of diagnosis *as soon as he suspects the possibility of tuberculosis.*

As soon as a diagnosis of active tuberculosis is made, the physician and public health workers should endeavor to bring about the most complete isolation possible. Housing conditions should be improved so that it will be possible to bring about isolation.

Education of the public as to the means of diagnosis available, the advantages of early diagnosis in bringing about a cure and the danger of contact with tuberculosis cases should be a valuable aid.

Public health workers should be ever on the alert to discover cases which have not consulted a physician.

If we all would strive just a little harder for early diagnosis and isolation of the patient, I feel that we can still reduce the incidence and mortality of tuberculosis a very great deal.

#### THE PRESENT STATUS OF THE TUBERCULIN TEST

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The tuberculin test is a specific test to tell if infection with tubercle bacilli has taken place in the human body. A true positive reaction always means that infection has taken place, but it does not necessarily in-

dicate disease, or whether it is active or latent. The test is used primarily as a screen in case finding surveys, to reduce the x-ray cost, since only positive reactors are x-rayed. It is also of diagnostic value when occasionally a doubtful etiologic shadow is present on the x-ray plate, for a negative reaction rules out tuberculosis in the overwhelming majority of cases.

In quite recent surveys conducted by Gass and his co-workers (1), McKneely (2), Crimm and Short (3), and Lumsden and his co-workers (4), there has been some doubt thrown on the value of the test as a screen. In these surveys, in which x-ray plates were taken of both positive and negative reactors, there were a small proportion of cases with a negative reaction that showed shadows that were interpreted as healed tuberculosis.

Due to these controversial articles Musacchio (5) tuberculin tested 1000 cases of active tuberculosis being treated at the Herman Kiefer Hospital, Detroit, Michigan, to determine the incidence of negative reactors. There were 23 negative reactors out of this group of 1000 cases. The 23 cases, on being broken down, consisted of 17 out of 528 cases of far advanced pulmonary disease, 2 out of 342 cases of moderately advanced disease, 1 out of 68 cases of minimal disease, 1 case of pleurisy with effusion in the toxic phase, 1 case of Pott's disease, and 1 case of bilateral renal disease. He states that the diagnosis may be questionable in the case of pleurisy with effusion, the 1 minimal, 1 of the 2 moderately advanced group, and in 1 of the far advanced group.

Among 1000 cases in the Hagerstown, Maryland, survey (2) both tested and x-rayed there were 13 cases of tuberculosis diagnosed on the x-ray findings. One of these had a negative reaction but in this case the findings were of only slight extent, confined to the apex, and apparently long arrested.

Long (6) states that in 610 cases diagnosed as tuberculous at the Henry Phipps Institute, in five consecutive years, all but one reacted to tuberculin and in this case it was impossible to recheck the test.

The fact that occasionally a known tuberculous case may fail to react to tuberculin has been known for some years and is not a new

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finding. From the literature D'Arcy Hart (7) cites the following conditions, in which the cutaneous test may be negative although tuberculosis is present:

1. Acute Tuberculosis: Very active tuberculosis, very heavily infected cases.
2. Military Tuberculosis: Tuberculous meningitis.
3. Advanced Pulmonary Tuberculosis with marked toxemia.
4. Cachexia, moribund patients. Patients a week or less before death.
5. Tuberculosis of serous membranes.
6. Lupus Vulgaris confined to the mucous membranes.
7. Certain skin conditions believed to be tuberculous—lupus pernio, lupus miliaris and the sarcoids.
8. During tuberculin therapy.
9. After ultra violet therapy.
10. After cure of once active clinical tuberculosis. After infection becomes extinct.
11. Tuberculosis complicated by measles, pneumonia, pertussis, scarlet fever, diphtheria, typhoid fever, influenza, secondary syphilis, and vaccinia. After a period the test usually becomes positive again.
12. During the incubation period or latent period following tuberculous infection.
13. General debility. Malnutrition.
14. Pregnancy and lactation. Menstruation. After oophorectomy.
15. After general anaesthesia.
16. Old age.
17. During typhoid immunization.

We are surprised by that occasional case of tuberculosis that fails to react to tuberculin because of the large percentage that do react positively. If we consider all the known facts in a given case we can usually see why that case failed to react.

**CHOICE OF TUBERCULIN:** There have been many forms of tuberculin placed on the market since Robert Koch first announced on November 13th, 1898, that he had found a substance which would "render animals immune against tubercle bacilli and bring to a standstill the tuberculous process in animals." Time has proven this statement to be wrong in most variety of tuberculous lesions, and tuberculin slowly found its place in diagnosis of infection.

In recent years the Purified Protein Derivative of Tuberculin (P. P. D. Tuberculin) has gained preference over Old Tuberculin (O. T.) in tuberculin testing, because it is a standardized product, does not give non-specific reactions, its stability in solid state, ease in making dilutions, and it is about as accurate as standardized O. T. and more accurate than one not standardized. With it one needs to give only two injections rather than three as with O. T.

Recent comparative tests made by McKneely (2) and Lumsden and his co-workers (4) with P. P. D. and standardized O. T. gave quite divergent results in comparison to the comparative tests carried out before the release of P. P. D. on the market for general use. Studies were made by Seibert and DuFour (8) to see if any reason could be found for this discrepancy. A batch of O. T. (Lot No. 771), similar to that used in the two above surveys, was fractionated. It appeared in tests made as if the P. P. D. prepared from the O. T. (Lot No. 771) was slightly weaker than the standard P. P. D. Secondly, it was discovered that O. T. (Lot No. 771) contained substances that caused non-specific reactions when used in moderate amounts but not in the dilutions corresponding to the usual test doses of O. T. It may be thought that sensitization exists in man to these non-tuberculin substances causing false positive reaction, or that these substances increase the reaction of the specific reacting fraction in the O. T.

The first test dose of P. P. D. recommended is 0.000,02 mgm. and is equivalent to 0.01 mgm. of Koch's O. T. The second test dose of 0.005 mgm. is approximately equivalent to 1.0 mgm. of O. T. It is conveniently made up in sterile tablets with lactose. When to be used these tablets are dissolved aseptically in a sterile buffered diluent, and is ready for use in ten minutes.

**MODE OF GIVING TEST:** Many modes of administration of the test have been suggested and tried, but the most commonly accepted one at this time, is the intracutaneous or Mantoux test. In this test 0.1 cc. of the first strength of P. P. D. is injected intradermally on the flexor surface of the forearm, after

cleansing the area with liquid soap and alcohol. The results of this injection are read 48 hours later: if the result is negative, a second test dose of 0.1 cc. of the second strength of P. P. D. are injected as before in the opposite forearm. The results are read again in 48 hours. Positive reactions are recorded from one to four plus, depending on the area of edema and redness; occasionally a delayed reaction occurs.

A new form of test known as the Vollmer Patch Test, to do away with injections, has recently been advocated. Quite divergent reports have been appearing in the literature in comparative tests, and no opinion can be expressed at this date till we have had some experience with this test.

**THE TUBERCULIN TESTING PROGRAM IN DELAWARE:** Group testing was started by the Delaware State Board of Health in January, 1934; the Delaware Anti-Tuberculosis Society paying for the tuberculin and the x-ray films used in this program. Before this testing was started a committee of the Delaware State Medical Society met with members of the State Board of Health and of the Anti-Tuberculosis Society, to formulate a program that would not encroach on the private physician, but yet at the same time would be of mutual service to all concerned.

A card was adopted by agreement that contains the individual's name, address, age, school and teacher's name. It is to be stated on the card whether the individual is a contact or non-contact. This card must be signed by a parent or guardian, and the family physician before the test can be performed. The physician is to state if the case is indigent or non-indigent, and on this basis to whom the positive reactor is referred for x-ray. A final report on the case is sent to the family physician signing the card.

Testing is done in the clinics on clinic cases, contacts and cases referred to the clinic by the various physicians; in schools that request this service; and in several of the State institutions.

An evaluation of the tuberculin testing performed has shown few cases picked up in the non-contacts in the younger age groups; this is especially true in the school groups. In our experience tuberculosis is relatively rare in

childhood in non-contacts, and when it does occur it is quite benign in character.

More recently we have attempted to concentrate our attention in the younger age groups, on contacts of known cases of tuberculosis, and on those cases referred to the clinics by the physicians because of some abnormal condition. We are more interested in testing the older age groups in their teens in schools, etc., for more is apt to be caught in the screen.

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#### THE MIDWIFE PROBLEM

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Any physician who has done obstetrics over any considerable period of time can recall with some displeasure as well as some humor certain circumstances in which a midwife has called upon him to assist her with an apparently difficult delivery. Occasionally the physician's services were imperative to bring the mother and child safely through the period of danger. On many occasions, however, the opposite was true and the physician's presence was necessary only to restore the nervous equilibrium of the midwife, patient, or family.

The type of midwife with which most of us, who have done rural practice, are familiar is an ignorant but well-meaning woman who has chosen to do midwifery because her association with a few deliveries has made her believe she knows how to properly care for a woman in childbirth. Some have chosen this field (especially the colored) because adequate medical obstetrical service has not

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been available to all of their people. They are forced to do midwifery to prevent their people from retrogressing to the pre-barbaric practice of self-delivery.

The day of this inadequate type of obstetrical service is slowly but surely passing. Communities throughout the state and nation are now awakening to the fact that such practice is dangerous and unnecessary. If childbirth is to be made safe for the child and the mother, nothing but the best of care must be accepted. Only well-trained obstetricians and physicians, are qualified to judge as to what constitutes proper and essential care. It is evident that such care is not forthcoming from untrained midwives. Women, preferably nurses, who have had extensive training under competent medical personnel are the only persons (not trained medically) whom we can trust to satisfactorily attend the birth of a child. Such persons are taught how to recognize an emergency and to call a physician before any condition becomes irremediable. They can be of invaluable service to physicians by saving unnecessary waste of time. They are capable of performing any normal delivery and can do a careful and satisfactory job.

Until all areas in this country have made such trained personnel available to people who desire midwife service, it is the important duty of every health department to educate and examine their present midwives so that the ones who are mentally or physically unable to give good care can be eliminated. I shall not elaborate on plans of training since it is quite obvious that such programs must vary in different communities. For example in the small state of Delaware, we are able to hold monthly meetings of midwives in the city of Wilmington. When monthly meetings were attempted in the rural sections attendance was so small that it was decided that it would be much better to hold quarterly sessions. A trial of this has proven very satisfactory and every midwife is required to attend unless excused for a good reason.

What kind of education can we attempt to get across to our midwives? How can we screen out the unfit? These are problems that require much deliberation. Again, this

situation must be met locally and is influenced greatly by the education, mentality, physical condition, and number of available midwives. The economic and social level of the people in a community is also a potent factor.

Perhaps, if we follow the progress of accouchement in the State of Delaware for the past few years we can foresee something of what we may expect from our present untrained midwives.

In 1930 there were 157 midwives in Delaware; 106 of these were colored and 51 were white. They were distributed in the State as follows: New Castle County, including Wilmington, 59; Kent County, 45, and Sussex County, 53.

In 1940 only 76 midwives are registered; 20 of these are white, and 56 are colored. They are distributed throughout the State as follows: New Castle County, including Wilmington, 23; Kent County, 23, and Sussex County, 30.

In 1929, nineteen per cent of all births in the State were delivered by midwives. In that year the infant mortality rate was 82 per 1,000 live births.

In 1939, twelve per cent of all births were delivered by midwives, and the infant mortality rate was 43 per 1,000 live births (uncorrected figures).

Comparing 1929 with 1939 the per cent of births attended by midwives in the state and counties is as follows:

	1929	1939
State .....	19%	12%
N. C. including Wilmington .....	15.5%	6%
Kent County .....	26%	26%
Sussex County .....	25%	19%

We have accomplished much in this State by providing midwife classes at regular intervals. Good instruction in the form of demonstrations has proven the best method here. Didactic lectures are practically useless since most of the words used are out of the range of the average midwife's vocabulary.

By means of life-size dolls all aspects of care of the mother and child are shown to the classes. After demonstrations by trained, experienced workers, a midwife is selected to give a similar demonstration before the group. Good points in the demonstration are discussed as well as any apparent errors.



Another successful way of getting across information is to select a competent accoucheuse and permit her (after much practice) to conduct a demonstration at a class. The results of this method have been so great that we now use it in a large number of our instruction classes. Moving pictures are very useful in teaching the proper technique for use at delivery as well as the importance of pre- and post-natal care. Extensive use has been made of the "Manual for Teaching Midwives" which is provided by the Federal Children's Bureau.

Any midwife registered in the State is required to have a clean bag in which she keeps the following equipment and supplies:

#### MIDWIFE BAG AND EQUIPMENT

Bag (with loose washable lining), liquid soap, lysol, sterile absorbent cotton, sterile absorbent gauze, blunt scissors for cutting baby's cord, nail brush for scrubbing hands, orange stick for cleaning finger nails, two dressings for baby's cord, two towels, cord powder, two cord tapes, clothes-pin wrapped with gauze, for convulsions, all-over apron, boric acid powder (for eye wash), birth report cards (furnished free), nitrate of silver ampules (furnished free), and a birth certificate book (furnished free).

All bags are inspected at least monthly by staff nurses while they are making visits in the field. Uncleanliness is a cause for revocation of registration.

Reports of all prenatal cases coming under their care is required of all midwives. This is done on a special card supplied to them by the State Health Agency. The number of reports is increasing each year due to the fact that prenatal care is one of the points stressed in instruction work and by the staff nurses who visit midwives regularly in Wilmington and the counties.

A dual system of reporting births has also proved beneficial. A card provided by the Health Department must be sent to the health officer in each county reporting the birth within 24 hours. This is in addition to the birth registration which must be sent to registrars within 10 days after a birth occurs.

When a card reporting a birth is received, in a midwife's case, the nurse immediately

makes a visit to the home of the patient. Health units handle all such reports as emergencies. In this way all cases that need medical assistance are quickly discovered so that necessary arrangements can be made for proper service.

This article is not intended to convey the thought that all our midwives who have been in practice for many years are incompetent. Quite to the contrary, there are numerous women who have been trained thoroughly in European schools and are doing splendid work.

Certain localities in this country have been trying a new system of nurse midwifery which seems to have much merit. In places where the nurse-midwife plan has been employed, it is reported that marked reductions in maternal and infant mortality rates have occurred. The only objection to such service is the expense involved. Service of this kind is far superior to any accouchement under the direction of an ignorant accoucheuse and is one answer to the problem that many health departments meet in dealing with midwives.

The question of who shall attend the confinement at childbirth of cases that physicians cannot handle has only one answer, trained and competent midwives or nurse-midwives. It is the health department's duty to see that their service is available to citizens who need it. It must also provide that patients who are to receive such delivery care, be given prenatal service so that many emergencies associated with pregnancy and childbirth may be eliminated.

In summary we reiterate that to provide good health service to mothers who desire midwife service, a health department should:

1. Train, supervise, and register all midwives.
2. Provide satisfactory prenatal service for all midwife cases or see that such service is provided by other agencies.
3. Make provision so that each new accoucheuse must have certain qualifications of training and experience before formal registration.

**PNEUMONIA IN DELAWARE 1939-40**J. R. BECK, M. D., AND T. E. HYNSON, M. D.,  
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Sulfapyridine was not released by the Food and Drug administration until March 10, 1939. Prior to that time (from November, 1938) there had been some of the drug available in Delaware for clinical trial; however the year 1939-40 has been the first year that the drug has been in use by almost all of the physicians in the State.

In the five-year period 1934 through 1938 there was an average of 212 deaths per year from pneumonia of all types. In the twelve months July, 1939 through June 1940, there were 149 deaths—a reduction of 63 or 29.7% over the five-year average.

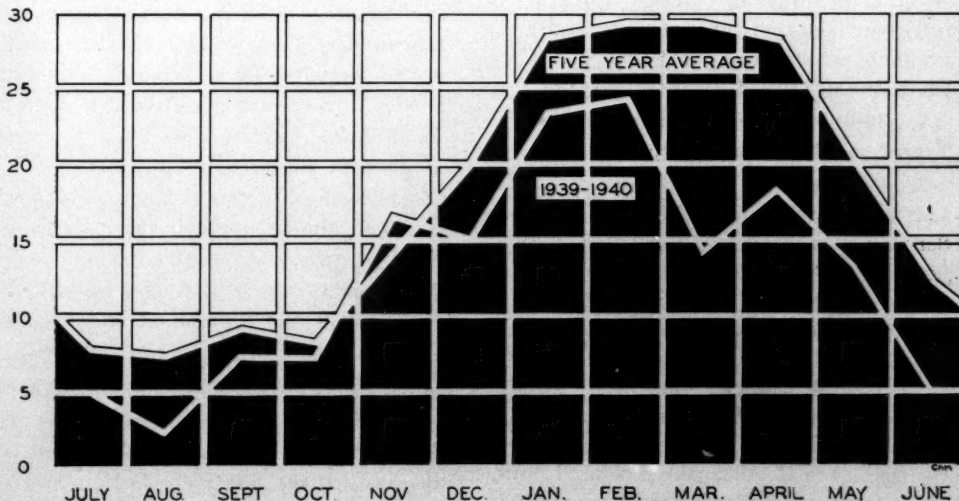
The following table shows this comparison by months:

\*Director and Assistant Director, respectively, Communicable Disease Control, Delaware State Board of Health.

**Pneumonia Deaths**

Month	Five-year Average 1934-38	1939-1940	Difference
July .....	8	5	—3
Aug .....	7	2	—5
Sept. ....	9	7	—2
Oct. ....	8	7	—1
Nov. ....	14	16	+2
Dec. ....	20	15	—5
Jan. ....	28	23	—5
Feb. ....	29	24	—5
Mar. ....	29	14	—15
Apr. ....	28	18	—10
May ....	20	13	—7
June ....	12	5	—7
Total ....	212	149	—63

Graphically this can be shown as follows:

**PNEUMONIA DEATHS IN DELAWARE**NUMBER  
OF  
DEATHS1939-1940 COMPARED WITH PREVIOUS FIVE  
YEAR AVERAGE

There were 69 pneumonia cases on which specific typing was obtained during the year.

27, or 39% were Type I

10, or 14.4% were Type III

5, or 7.2% were Type VII

4, or 5.8% were Type VIII

3, or 4.3% were Type XIX

Types II, XII, XIV, XVI, XVII, XXI, and XXIX, each occurred in two cases. Types IX, XV, XVIII, XXII, XXIII and XXIV each accounted for one case. Thirty-two cases were reported as either negative for type, or were only partially typed.

Sulfapyridine was supplied by the State Board of Health for the treatment of 134 cases of pneumonia. Anti-pneumococcic serum was also supplied and used in conjunction with sulfapyridine in seven of these cases. Six deaths occurred in the 127 cases treated with sulfapyridine alone, none in the 7 receiving both serum and sulfapyridine. The mortality in these 134 cases was 4.5%. The ages of four of the fatal cases were 50, 63, 66, and 75 years respectively.

With the increased use of sulfapyridine and the greater familiarity of physicians with its action a further reduction in deaths from pneumonia can be anticipated.

#### SUMMARY

1. There were 149 deaths from pneumonia in Delaware in 1939-40. The first full year sulfapyridine was generally available a reduction of 63 or 29.7% below the 1934-1938 five-year average.

2. 39% of the 69 cases typed were Type I and 14.4% were Type III.

3. Sulfapyridine was supplied for 134 cases with a mortality of 4.5%. Serum was supplied and used in conjunction with sulfapyridine in seven cases.

#### MILKER'S NODULES:

##### A Clinical Note

JOSEPH R. BECK\*

Dover, Delaware

On December 16, 1939, three colored boys M. K. age 20 years, C. N. age 21 years, and

W. T. age 18 years were brought to the office by Doctor Grossley, President of the Delaware State College for Colored Students, having been referred by Doctor Henry, the college physician. All three boys were students engaged in milking. Each had a solitary nodule on the hand. Two of the boys each had a lesion on the dorsum of the left hand just proximal to the distal end of the second metacarpal. The lesions when seen were about two weeks old and were rather firm erythematous nodules about  $1\frac{1}{2}$  cm. in diameter at the base and about 1 cm. in height. The third boy had a lesion on the palm of the right hand, approximately the same size as the others, which was about 10 days old and it appeared to be somewhat pustular. Only serosanguinous fluid was obtained from it when a direct smear was made, which showed nothing of any apparent importance.

The lesions remained nodular and gradually involuted and disappeared in the next three or four weeks. All three boys presented successful vaccination scars and on the basis of this and the subsequent course of the lesions cowpox was ruled out.

No definite diagnosis was made until the writer saw Doctor F. T. Becker's exhibit at the American Medical Association Convention in New York in June. At the meeting of the Dermatology and Syphilology section Doctor Becker gave a lantern demonstration on Milker's nodules describing four cases along with microscopic observation. Paul's test performed in two of his cases was negative and the subsequent vaccinations with vaccine virus was positive. These nodules are thought to be caused by a filtrable virus occurring on the udder of an infected cow.

Three cases of milker's nodules occurred in Delaware in December, 1939 and are reported because the condition is more widespread than is commonly known and since the lesions are relatively benign and self-limited, little attention has been paid this disease.

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## TOXIC REACTIONS FROM BISMUTH COMPOUNDS USED IN TREATMENT OF SYPHILIS

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Dover, Delaware

Although numerous compounds of bismuth have been in common use in the treatment of syphilis for several years, and have practically replaced mercurial preparations for this purpose, little has been written in regard to their toxicity. Reactions, other than the well recognized bismuth line and the occasional case of gingivitis, are rare.

Little is given in the textbooks of pharmacology on this subject. Cushny describes the bismuth deposits producing black areas in the mouth, gingivitis, pain and difficulty in swallowing and even gangrene of the soft palate and other parts of the oral mucous membranes, vomiting, diarrhea and albuminuria. These reactions are all apparently due to over dosage rather than to sensitivity to the drug.

Such comparative research as has been reported is based on the relative degree of nephrosis produced in rats by various bismuth compounds. Kolmer, Brown and Rule in 1938 reported such a study of the relative toxicity of the 13 bismuth compounds listed in the 1937 edition of New and Non-official Remedies. Four of these were administered as aqueous solutions, one in propylene glycol, two in solution in olive oil, and the remaining six, insoluble in both oil and water were given as suspensions in olive, sesame or peanut oil. The amount of elemental bismuth in the recommended therapeutic dose varied enormously from 22 mgm. in one water soluble preparation to 128 mgm. in a suspension of bismuth subsalicylate in oil. In general, aqueous solution were more toxic than those in oil and both more so than water soluble or insoluble compounds suspended in oil, doubtless due to differences in the rates of absorption and excretion. Thiobismol (bismuth thioglycollate) which was the most rapidly absorbed, being given in aqueous solution and also being the only soluble preparation studied which was not precipi-

tated in the tissues, was the most toxic. That the chemical structure as well as the above factors effects the toxicity was shown by the ability of the rats to tolerate doses of either sodium or potassium bismuth tartrate fifteen times as large as of potassium sodium bismuth tartrate.

The therapeutic index, based on the treponemicidal activity in rabbits was found to be 1 for thiobismol and 166 for an oil suspension of bismuth subsalicylate which is in line with the clinical observations that while bismuth is highly treponemicidal it requires prolonged action through slow continuous absorption for the best results.

Schultz and Chaney reported two deaths in which toxic nephrosis was apparently produced by the rapid absorption of large amounts of bismuth from encapsulated deposits in the gluteal muscles which, for some reason, broke down. In one case 42% of the total amount of 8.246 gm. known to have been given, was recovered from the gluteal muscles two years after the last injection. In both cases both the clinical and pathological pictures resembled those of acute mercury poisoning, though bismuth alone was found. That such encapsulated deposits commonly occur is demonstrated by the frequent presence of nodules in the gluteal muscles sometimes months after the last bismuth was given.

A number of cases of jaundice apparently due to bismuth therapy have been reported, but as in the jaundice due to arsenical drugs it is very difficult to differentiate from that produced by syphilis or by catarrhal jaundice. Nowland, Skolnick and McLellan reported 32 cases of jaundice following bismuth therapy. Their criteria for fixing the responsibility on bismuth were (1) Lack of recent treatment with an arsenical compound, at least within the last three months, (2) Development of jaundice within six weeks following the last injection of a bismuth compound, (3) Absence of other causes of jaundice, (4) Complete clinical recovery. Ten of their cases had never received an arsenamine compound. They reported the incidence of jaundice as one in 2,242 injec-

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tions of bismuth. Lane, using similar but less rigid criteria, reported 100 cases of jaundice, 60 having previously received bismuth.

A few cases of dermatitis following the use of bismuth in persons who had previously had arsenical exfoliative dermatitis have been reported by various writers. It has been demonstrated that these reactions might be due to minute quantities of arsenic carried in the syringe and needle used for bismuth if they had been sterilized in the same water as syringes used for an arsenical preparation. That residual arsenic on fruits or tobacco may produce the same effect has been shown recently.

The writer observed a case of dermatitis which at first was thought to be due to sensitivity to neoarsphenamine and later was found to tolerate arsenical drugs but developed a recurrence following bismuth therapy necessitating its being discontinued and mercury substituted.

B. D., a Negro boy of 19 years was first seen in the Georgetown Clinic of the State Board of Health, May 4, 1937. A history of a penile lesion two years was obtained for which he had received local treatment only. His Wassermann and Kahn tests were both positive and the history examinations being otherwise negative, a diagnosis of early latent syphilis was made. Following the fourth injections of neoarsphenamine pruritic maculopapular lesions appeared on the trunk, arms and neck. This was thought to be an arsenical reaction and the neoarsphenamine was discontinued. Treatment was continued with bismuth subsalicylate in oil, and the lesion disappeared in a few days. After four injections of the bismuth, the skin of the palms and soles became dry, hard and fissured and he lapsed from treatment for a month. The lesions disappeared in the interim. He was again given the same bismuth preparation and the cracking and fissuring reappeared in a much more severe form after the first injection. It was then thought that he might be sensitive to bismuth and mercury salicylate in oil was given without ill effect. After a course of injections of this he was given a very small dose

of neoarsphenamine as a test. No reactions occurred and it was possible to increase the dose to 0.6 Gm. He has since received a total of 35 injections of neoarsphenamine, 6 of mercury salicylate and 24 weeks of mercury inunctions (which were used because of the severe local reactions to the mercury salicylate) without untoward effects.

The occurrence of the fissuring of palms, hands and soles twice after bismuth subsalicylate was given, the failure of a recurrence of the first type of reaction after neoarsphenamine was given and the absence of reaction to mercury salicylate and mercury by inunctions in addition to the lack of any history of previous skin lesions or allergic reactions strongly suggests the presence of sensitivity of bismuth. Both the bismuth subsalicylate and the mercury salicylate were suspended in olive oil, and chlorbutanol was used as the preservative in each, thus ruling out sensitivity to either the vehicle or preservative.

#### Summary

The few reports of systemic toxic reactions following the use of bismuth in the treatment of syphilis leads one to think that these preparations are free from untoward effects. A few cases of nephrosis, jaundice and dermatitis have been reported and it has been demonstrated that there is a vast difference in both the toxicity and therapeutic efficiency of various compounds.

A case of dermatitis apparently due to sensitivity to bismuth subsalicylate is reported.

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#### THE POPULATION OF DELAWARE

CECIL A. MARSHALL, B. S., C. P. H.\*

Dover, Del.

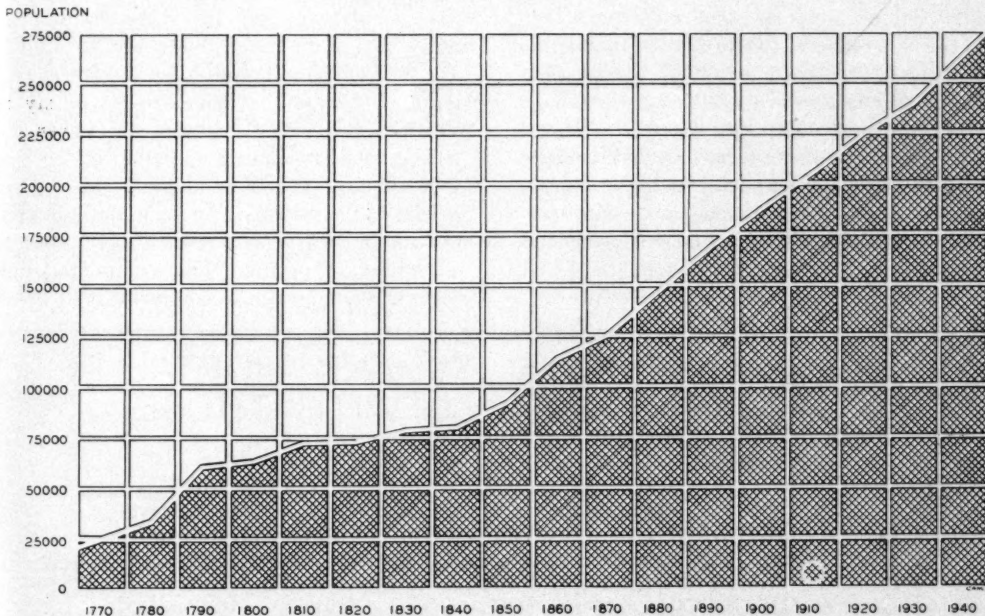
The population of Delaware for over a century and a half has continually shown a moderate but substantial increase. The rise has been of such a degree as would be ex-

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pected in an agricultural region, in contrast to industrial centers where often spontaneous increases are noted in populations of various complexities. The tenfold multiplication in numbers of human beings during these seventeen decennial periods, as is pictured in Graph 1, has necessarily brought to mind consideration of many aspects and qualities of our people that is necessary for the promotion of good public health.

This information well tabulated, analyzed and interpreted serves an essential purpose in community planning from the civic point of view, as well as the promotion of better conditions of health among its numbers. The integration of these communities compose the states within which many factors of economic and biological significance operate to give us the varied rates of morbidity, natality and mortality that we now have.

## THE INCREASE IN THE POPULATION OF DELAWARE



The various attributes of our population in total falls within the sphere of demography, but the vital statistician concerns himself with these vital facts of society in a narrower sense since he is limited to the public health angle. It is of fundamental and vital importance that these facts be recorded, primarily of importance to the individual whose record has reached the vital statistics' office and of secondary importance in furnishing grist for the mill of analysis as a result of which we get information of group phenomena of importance and interest to communities, counties, states and finally the nation as a whole.

Of fundamental importance in the study of population is the use the vital statistician can put to the accumulated data in forecasting the changes our population is taking, whether a rise or decline in a world that is planning for the future. At best it has often been found very difficult to predict growth, and this procedure is rendered much more inaccurate by the incomplete reporting of vital facts. So we see the registration of these facts concerning ourselves becomes very important.

The most simple and fundamental rate that can be used as an indicator of our population



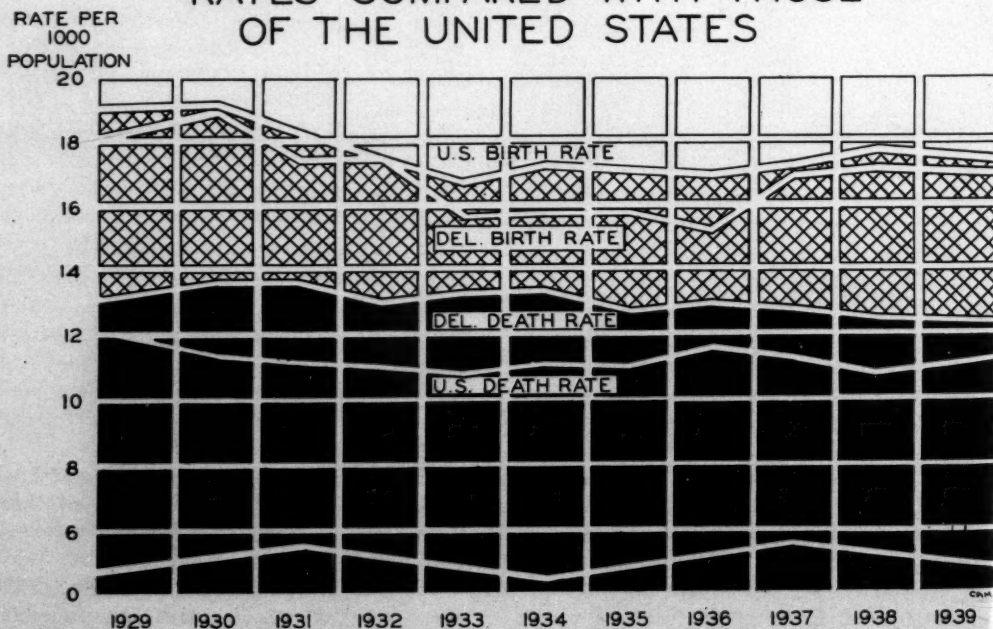
growths is known as the general mortality rate, more appropriately stated as the crude death rate, and can be employed as a comparison to the crude birth rate. This is a figure obtained by apportioning the proper ratio of births or deaths per 1,000 population.

In 1939 the crude mortality rate for Delaware was 12.2 compared to the crude natality rate of 16.9. This gives the state a true rate of natural increase of 4.7 per 1,000 total population for last year. It might be well to say that the crude rate is herein employed in its most beneficial capacity. Without supplemental explanation it is a poor measure of efficacy of any public health effort. However, statistical measures of some refinement that we can most effectively and frequently employ to evaluate the benefit of public health effort on our populations are specific natality, morbidity and mortality rates for age, color and sex. There are also a number of other measures of statistical importance we can often use, some of which are as follows: standardized rates, morbidity rate, morbidity-mortality ratio, case fatality rate, standard deviation, etc. However, the time-consuming com-

putation of these statistical refinements constitute the scope of the vital statistician's work and, when desired, are rendered as a part of his service to the people.

From the picture in Graph II we find that for the past decade Delaware compares favorably with the U. S. Registration Areas in the rate of natural increase in population, although the surplus of births over deaths has never been as great as for the whole country. In regard to this fact we may consider ourselves in a similar position to a few of the other southern states. Of necessity, being a largely agricultural area, employment often becomes less of an inducement to a group of our population than elsewhere in the factories and industrial plants farther north. The city of Wilmington is the industrial center of Delaware that compares favorably in size with those of other states. However, the recent construction and operation of the Seaford nylon plant will undoubtedly be of great benefit to the state as a factor in its industrial growth and will offer a resident occupation to a number of people. The group from this state which migrates to employment of great-

## DELAWARE NATALITY AND MORTALITY RATES COMPARED WITH THOSE OF THE UNITED STATES



er opportunities may well be considered that of 20 to 44 years. The following table, which shows a decline in the early age group and an increase in the later age group, will give evidence to the fact of partial migration of our population of the early twenties to forties.

THE TREND IN THE THREE AGE GROUPS  
OF DELAWARE'S POPULATION  
IN PER CENT

	1-19 yrs.	20-44 yrs.	45 yrs. and over
1910 .....	38.4	38.8	22.8
1920 .....	37.0	38.9	24.1
1930 .....	35.8	37.9	26.3
1940 .....	34.2	37.2	28.6

Referring to the above table, we see that the percentage of middle age population has practically remained the same, while over the thirty-year period the early age group has decreased four per cent, and the percentage of people in the later age group has increased five per cent during the same period. Of somewhat lesser importance in producing the ageing of the population in the state may be considered the decline of the crude birth rate, which in numbers has been reduced about 4 per 1,000 population in the last three decades. That is from 21 per 1,000 population in 1910 to 17 per 1,000 population in 1940. During the period our crude death rate has not declined as rapidly as the birth rate. This fact has been in evidence throughout the country in general, and it is much more to be emphasized in highly industrialized urban areas than in rural and suburban sections. In an analysis of the ageing of populations, due consideration also must be given to the fact that within recent years the application and prosecution of medical and public health practices has been a factor of much force in reducing the number of fatalities in the younger age groups. In consequence, the trend has been to prolong the lives of these individuals with the advance in years, which is concomitant with the advance in medical science, until a time of greater maturity when nature plays the more dominant role.

It might be of interest to tell the distribution of our population according to color. An estimation for 1940, which very closely approximates that of the April census, shows we have 223,572 white population and 33,798 colored. It is distributed as follows: Wilmington—99,837 white, 12,760 colored; rural

New Castle County—58,154 white, 6,637 colored; Kent County—26,095 white, 6,614 colored; Sussex County—39,486 white, 7,787 colored. A release of figures from the April census indicates there is a discrepancy of some 7,000 individuals compared with our estimate which was 257,370. By actual count in the April census there were 264,602 people in Delaware. This figure represents an increase of 26,222 from the 1930 census. During the 1930-1940 decade the rise in population was over 10,000 greater than that from 1920-1930. This increase may be due largely to our industrial growth.

The white birth rate was 16.9 per 1,000 white population for 1939 in contrast to 20.1 for the colored; and the white mortality rate was 12.2 in contrast to 16.7 for the colored. For some time it has been noted that the colored birth and mortality rates more closely approximate each other than the white, which enjoys a margin of 4.7 per 1,000 population. It can be stated that the colored rates are much higher than the white, and the colored birth rate very closely approaches our general birth rate of 20 to 30 years ago. However, the colored mortality rate is correspondingly high and for most years reduces the surplus in that population to a lesser extent than existed in 1939—that of 3.4 per 1,000.

It is of much interest to compare the forces of natality, morbidity and mortality between the two races and associate these figures as a measurement of the difference in public health effort needed to correct deficiencies in their respective spheres of life.

To associate, discover and help remedy these things, the faults of living in our people, the structure of public health is of very beneficial character and it in turn rests firmly on a foundation of which vital statistics is an integral part.

#### SUMMARY

The past 150 years has shown a tenfold advance in the growth of the population of Delaware. The latest figures we have are those from the April census for 1940, which are distributed as follows for the counties and the city of Wilmington—the State, 264,602; city of Wilmington, 111,491; rural New Castle County, 66,432; Kent County, 34,356; Sussex County, 52,323.

Our present rates are computed on estimations from 1930, but will be revised, at least for the present year, in light of the more correct figures.

The general birth rate and death rate for Delaware in 1939 were 16.9 and 12.2 respectively. The colored rates are both higher, but the surplus of births over deaths is not as great as in the white population.

Since 1910 we have noted a 5% decrease in the early age groups, and a 4% increase in the older age group. This has been brought about by three factors—1, migration of people in the middle age group—2, decrease in birth rates—3, efforts of medical science in advancing the age of man.

### THE PROBLEM OF BATHING PLACES IN DELAWARE

RICHARD C. BECKETT, B. S.\*

Dover, Delaware

Many inquiries are received each summer by the State Board of Health as to the quality of the various bodies of water which are used by the people of this State for swimming purposes. Such requests have pertained to the many ponds, both large and small, found throughout the State; many rivers and streams; and even the waters found at our seashore resorts. To answer such inquiries with the preciseness with which you can answer an inquiry pertaining to a drinking water supply is something that cannot be done with our present state of knowledge. Furthermore, the researches that have been made with reference to the use of open bodies of water for bathing purposes indicate that very few actual cases of typhoid fever have ever been traced to swimming, although the evidence is stronger that certain infections peculiar to the eyes, ears, nose and throat may result from inferior waters. A good many authorities, however, feel that most of this infection is caused and introduced into the water by the bathers themselves, particularly in congested areas.

#### HOW STANDARDS EVOLVE

In public health work, over a period of years, we gradually come to adopt certain standards usually proposed first by leading

scientists and investigators and then these suggestions are followed by continued research studies and eventually some crystallization of thought occurs. This has been the story in the setting up of standards for drinking water supplies and for milk. Likewise, over a period of years, very definite standards have been developed for artificial swimming pools. This is so because the problem entails factors which can be controlled. That is to say, you know the quality of the water which is entering the artificial pool, how often it is recirculated, how many bathers are using the pool during a certain time period, and, consequently, standards can be developed for maintaining the purity of the supply and, also, standards set for the volume of water to be used per bather. The Committee on Bathing Pools and Beaches, of the American Public Health Association, has considered this problem for years and the standards adopted by this Committee have in turn been adopted by many of the states with some changes here and there.

#### PRECISE STANDARDS FOR OPEN BODIES OF WATER NOT PRACTICABLE

In the case of open bodies of water, many uncontrolled factors influence the decision as to whether such waters are satisfactory for bathing purposes or not. The difference between standards applying to artificial swimming pools and open bodies of water may be illustrated by the use of the B. Coli group as an indicator. In the case of artificial swimming pools, the water supply is very often a municipal drinking water supply, or from a well of a good bacterial quality and relatively free from B. Coli. Consequently, where B. Coli is found in artificial swimming pools, this pollution must be rated as of human origin. On the other hand, B. Coli may be found in many open bodies of water, but will be of relatively little significance as it may be due to animal or avian origin. Such contamination may be blown by winds into a pond or may be carried into the pond by rains after storms have occurred over the watershed. From a public health standpoint, therefore, to apply the standards of artificial swimming pools to natural bodies of water

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would be to practically condemn them all. whereas, the evidence which we have as far as the spread of disease is concerned would not warrant such drastic action.

The sanitary survey, that is the actual survey of the shore land, or in a case of streams, a survey of the watershed, is a most important factor since actual sources of pollution can thus be located. Even here, where some sources of pollution may be found, the question of distance and the degree of dilution are factors to be considered. Sanitary surveys have been made of all the ponds in the State which are used for swimming purposes and, also, of certain streams.

#### GENERAL PICTURE OF BATHING AREAS

The general picture in this State is somewhat as follows. Ocean bathing in this State, of course, is satisfactory, although there are some objectionable conditions due to oil wastes near Lewes and then as you come up the coast northward, you start to run into muddy beaches which detract from the attractiveness of bathing, and then as you journey toward Wilmington, you encounter areas which are grossly polluted. For instance, the lower reaches of the Brandywine, Christiana, Red and White Clay Creeks are unsatisfactory for bathing. As you come inland and starting down at the bottom of the State, numerous tests of Rehoboth Bay and Indian River Bay show these waters to be of excellent quality for bathing purposes. Further, as you come up, you will find rivers that are not satisfactory for bathing, such as the Nanticoke, Mispillion, St. Jones and Smyrna Rivers.

Sanitary surveys and the bacteriological examination of the water of most of the ponds in the State indicate that they are satisfactory for bathing purposes. No two ponds can be classified as exactly the same and, consequently, each has to be considered by itself. Some of the ponds are rendered useless due to the lack of flow of water through the ponds during July and August and the water actually becomes "thick" due to the growth of algae. This has often caused parents to prohibit their children swimming in such ponds, not necessarily because

the water is unsafe bacteriologically, but it is simply not inviting for swimming purposes.

#### DIFFICULTY OF ALGAE CONTROL

While attempts have been made to control the algae conditions in other states with indifferent results, very little effort has been done in this State as far as our knowledge is concerned. Sometimes the ponds are privately owned and the owner, of course, does not feel called upon to take money out of his pocket to remedy such conditions. There are other cases where the town might do so, but they have not felt it necessary nor desirable. Another factor influencing the use of chemicals would be the determination of the proper dosage of copper sulphate strong enough to control algae but yet not strong enough to kill fish. This is not always easy to do.

#### ATTEMPTS AT CHLORINATION

In some states where bodies of water have shown high bacteria counts, even though the sanitary survey has been satisfactory, efforts have been made to disinfect the immediate areas used by the bathers. Some have established fairly elaborate systems of under-water piping so that a chlorine solution can be introduced at various points and at stated intervals. Others have attempted to use boats in which are located containers holding a chlorine solution and then this solution is distributed two or three times a day over the bathing area. Others have attempted the same thing by merely throwing chlorine compounds on the surface of the water. These results, however, have not been entirely satisfactory.

#### A SAMPLE SURVEY

A very good illustration of the many factors that go into judging as to whether a pond or lake is satisfactory for bathing purposes is illustrated by the tests that have been made on one lake in this State during the last two months. This is a rather large lake, fed by a small stream and quite some distance above the lake itself is a community which has a modern sewerage system and sewage treatment plant, the effluent of which discharges into this stream. Frequent sam-

ples were taken of the stream above the sewage treatment plant, of the effluent from the sewage treatment plant just below the plant, and then at various places throughout the lake. The results indicated that the effluent from the sewage treatment plant was of better quality than the stream into which it discharged and that no effect was felt from this plant in the stream itself. The samples taken throughout the lake indicated that the water was satisfactory for bathing purposes. The chief objection to the water was the color imparted by the bleaching out of certain tannins, giving a slight brownish

that is to say, where the B. Coli content per 100 c. c. averages between 51 and 500. If the sanitary survey were satisfactory, that is, no sources of pollution found nearby, even such a pond with a fairly high B. Coli content would be considered satisfactory.

Under such liberal interpretations, most of the ponds and lakes in this State would be rated as satisfactory.

Using the above tentative standards as basis for judging open bodies of water, the ponds in this State, as a result of samples taken in past years as well as this year would rate as follows:

Name of Body of Water	Location	Average B. Coli per 100 c.c.	Sanitary Survey	Rating
Indian River Bay .....	Oak Orchard .....	0	Good	Good
Rehoboth Bay .....	Rehoboth .....	0	Good	Good
Silver Lake .....	Rehoboth .....	124	Good	Good
Millsboro Pond .....	Millsboro .....	50	Good	Good
Wagamon Pond .....	Milton .....	53	Good	Satisfactory
Milton Pond .....	Milton .....	950	Good	Satisfactory
Burton Pond .....	Angola .....	33	Good	Good
Haven Lake .....	Milford .....	158	Unsatisfactory	Unsatisfactory
Killen's Pond .....	Felton .....	6	Good	Good
Wyoming Pond .....	Wyoming .....	62	Unsatisfactory	Unsatisfactory
Voshell's Pond .....	Wyoming .....	102	Good	Good
Silver Lake .....	Dover .....	71	Satisfactory	Satisfactory
Lake Como .....	Smyrna .....	124	Good	Good
Silver Lake .....	Middletown .....	63	Satisfactory	Satisfactory
Hearn's Pond .....	Seaford .....	530	Poor	Unsatisfactory
Records' Pond .....	Laurel .....	257	Poor	Unsatisfactory
Noxentown Pond .....	Middletown .....	3	Good	Good
Moore's Pond .....	Camden .....	550	Good	Good

tinge to the water. In August, algae will probably come into full bloom, thus giving a disagreeable appearance to the water.

#### A TENTATIVE CLASSIFICATION

The classification set-up for ponds by the State of Connecticut has been used by some states as a guide. This is as follows:

0 to 50 B. Coli per 100 c. c.=Good

51 to 500 B. Coli per 100 c. c.=Doubtful

Over 501 B. Coli per 100 c. c.=Poor

The above ratings are somewhat more stringent even than those recommended by the American Public Health Association. However, in many cases, the sanitary survey will still be the most important factor, particularly in those rated as "Doubtful";

#### SYPHILIS TESTS:

##### Delaware State Laboratory Approved

ROWLAND D. HERDMAN, B. S.\*

Dover, Del.

During the last four years, this laboratory took advantage of the opportunity which was offered by the Division of Venereal Diseases of the U. S. Public Health Service to all state laboratories to collaborate in the evaluation of serodiagnostic tests for syphilis. Nearly all of the state laboratories took part in this project. The Kahn and Kolmer tests were evaluated for sensitivity and specificity by making tests on approximately 300 samples of blood and comparing our results with the re-

\*Bacteriologist and Chief Serologist, Delaware State Board of Health.

sults of the originators of the tests. By sensitivity is meant the ability of tests to react with samples of blood from syphilitic individuals. Specificity means free from false positive reactions from non-syphilitic individuals. Our laboratory received an excellent rating each year in these tests and we have been approved as having met the necessary requirements of the committee on evaluation of serodiagnostic tests of U. S. Public Health Service.

During the Assembly of Laboratory Directors and Serologists held in Hot Springs, Arkansas, October 21st and 22nd, 1938, the Committee on Improvement of Methods for Determining the Efficiency of Serological tests recommended that a laboratory, to qualify as satisfactory, should attain a sensitivity rating of not more than 10 per cent below that of the control laboratory, and a specificity rating no less than 99 per cent.

The sensitivity and specificity ratings received by this laboratory and the control laboratory during the past three years are as follows:

#### KOLMER COMPLEMENT FIXATION

	Sensitivity %	1938 Specificity %
Control Lab. ....	78.2	100
Del. Lab. ....	78.0	100
		1939
Control Lab. ....	83.4	100
Del. Lab. ....	77.1	100
		1940
Control Lab. ....	71.7	100
Del. Lab. ....	68.5	100

#### KAHN STANDARD TEST

	Sensitivity %	1938 Specificity %
Control Lab. ....	70.5	100
Del. Lab. ....	79.5	98.8
		1939
Control Lab. ....	77.4	100
Del. Lab. ....	76.1	100
		1940
Control Lab. ....	71.2	100
Del. Lab. ....	66.0	100

#### DELAWARE ACADEMY OF MEDICINE

Activities during the summer months have included: The tenth anniversary banquet, cataloguing recent accessions to the library, preparations of journals for the bindery, and inventory, as well as assembling material on numerous reference questions.

The observance of the tenth anniversary of the founding of the Academy was the oc-

casional for a banquet held at the Academy on May 9, 1940. In addition to the physician and dentist members of the Academy and the members of the board of directors, those attending were the Governor, the Mayor, and several other distinguished invited guests, prominent in hospital and public health service.

Dr. Lewis B. Flinn, president of the Academy, was toastmaster. Dr. William H. Kraemer, treasurer, who has written a history of the Academy, spoke briefly on the history of the building (formerly the Delaware Bank building at Sixth and Market streets) and its use now as a library and meeting place for the medical and dental professions. He cited the great assistance given to the group of founders by several public minded citizens in removing the building to its present location at Lovering avenue and Union street, along the Park Drive, and spoke of the rich heritage from our forefathers in medicine, paying tribute to Dr. Nicholas Way, a Wilmington physician who died a martyr in the fight against yellow fever in 1797 after an active life in fighting the plague and giving refuge to many sufferers.

Dr. C. M. A. Stine, a member of the board of directors, spoke on "The Layman's Interest in Medicine," and Dr. O. H. Perry Pepper, vice president of the College of Physicians, Philadelphia, the guest-speaker of the evening, spoke on "The Value of An Academy of Medicine," pointing out the valuable assistance that it offers to the members of the medical and dental professions.

Dr. C. L. Munson was chairman of the committee in charge of arrangements for the banquet.

Recent accessions to the library are:

American Medical Association Directory, 16th ed., 1940.

Hauser, E. D. W., Diseases of the Foot, 1939.

Lahey, F. H.: Birthday Volume, 1940.

Macleod, J. J. R.: Physiology in Modern Medicine. Edited by Philip Bard et al., 8th ed., 1938.

Pack, G. T. and Livingston, E. M., editors: Treatment of Cancer and Allied Diseases, 3 vols., 1940.



### MEDICAL SOCIETY OF DELAWARE: 1940

The One Hundred and Fifty-first Annual Session of the Medical Society of Delaware, will be held at the Henlopen Hotel, Rehoboth Beach, Delaware, on September 9, 10 and 11. The House of Delegates meeting will be held on the evening of September 9. The Scientific Committee has arranged a most interesting program for the scientific sessions of September 10 and 11. All programs have been arranged so that there is sufficient time for swimming and other recreation. There will be a banquet held on Tuesday evening. The following papers are to be presented:

Dr. Emil Novak, Baltimore: Some Endocrine Aspects of Gynecology.

Dr. James E. Marvel, Laurel: Otitis Media.

Dr. John A. Kolmer, Philadelphia: The Present Status of Vaccination Against Disease.

Dr. George C. Griffith, Philadelphia: The Significance of Precordial Pain.

Dr. Ernest L. Stebbins, Albany: Streptococci Infections.

Dr. Edward Weiss, Philadelphia: Renal Aspects of Hypertension.

Dr. Carl H. Davis, Wilmington: Complicated Labor (Movies).

Dr. Joseph B. Wolfe, Philadelphia: Atheromatous Cardio-Vascular Disease.

Please mark these dates on your calendar so that we may have a good attendance.

#### Osler at Old Blockley

"Osler at Old Blockley," a painting in oil by Dean Cornwell, was unveiled at the dedication of the Osler Memorial Building on the grounds of the Philadelphia General Hospital this past June and was later exhibited at the American Medical Association convention in New York.

The painting depicts one of Osler's outstanding contributions to medicine, namely, bringing medical students to the bedside of the patient for clinical study. In the painting Osler is shown at the side of an elderly patient on the hospital grounds. Surrounding Osler and the patient are internes who have stopped with him as they were on their way to the autopsy house to observe one of his famous post mortems. This autopsy house, now the only Osler Memorial Building in the United States, is shown in the background.

This memorial was made possible by a grant from John Wyeth & Brother.

"Osler at Old Blockley" is the second painting in the series "Pioneers of American Medicine," sponsored by John Wyeth & Brother as part of a project to highlight the contributions of Americans to the advancement of medicine. "Beaumont and St. Martin" was the first painting in the series.

Colored reproductions of "Osler at Old Blockley," suitable for framing, may be obtained free by addressing requests to the Delaware State Medical Journal, 1022 Du Pont Building, Wilmington.



#### "Sulphathiazole" and "Sulfamethylthiazole" the Nonproprietary Names for 2-Sulfanilamidothiazole and 2-Sulfanilamido-4-Methylthiazole

The Council on Pharmacy and Chemistry reports that the terms "sulfathiazole" and "sulfamethylthiazole" are acceptable to Dr. Fosbinder, who is credited as the discoverer of 2-Sulfanilamidothiazole and 2-sulfanilamido-4-methylthiazole. Inquiry was also made of Dr. E. J. Crane, chairman of the committee on nomenclature of the American Chemical Society, who also informed the Council that, in his opinion, there was no objection to offer to these nonproprietary names. Accordingly, the Council adopted the recommendation of its Committee on Nomenclature that the terms "sulfathiazole" and "sulfamethylthiazole" be accepted as nonproprietary designations for 2-sulfanilamidothiazole and 2-sulfanilamido-4-methylthiazole, respectively. The adoption of these terms does not indicate at this time the acceptance of the substances. (*J. A. M. A.*, June 15, 1940, p. 2387).

# EDITORIAL

## DELAWARE STATE MEDICAL JOURNAL

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All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: \$2.00 per annum in advance. Single copies, 20 cents. Foreign countries: \$2.50 per annum.

VOL. XII AUGUST, 1940 No. 8

### MEDICINE AND NATIONAL DEFENSE

The human ability to postpone consideration of consequences of mass action is amazing. He becomes so engrossed in the action per se that the response to the action is considered not in possibilities but only in the light of his own projected desires.

Since man first began quarreling on a large scale with his neighbor, the result has been repeated over and over. The vicious cycle—provocation, war, famine and pestilence has never been broken for any prolonged period of time. Even isolation is no longer considered as conferring immunity to these disasters. While Europe is certain of the consequences of the wild ride of the Four Horsemen, we in the United States, if the present trend of thinking would be an indication, feel

that if we must enter a conflict, preparation for it and its results had better begin at once.

Labor, agriculture, transportation and consumer must function with teamwork precision to provide the materials of preparedness. Man power must be mobilized, but it is obvious that ships, guns and planes are of little value without the ability to man them.

The medical profession—our calling—is one of peace and humanitarianism. War will not change it. It does seem rather illogical to prepare a person physically, protect him in his environment, only to see him later as a broken victim of an instrument of destruction. But such is war and modern methods of warfare.

However, there is another side to our preparedness program. What of our civilian population? What of our profession? During the last war many communities were left without adequate medical care through enlistment of physicians. Many a physician returned and upon demobilization found that his practice was gone and again had to begin from scratch. Such things should not be permitted to occur again.

The extent of our problem in national preparedness is much greater than generally recognized. It takes time to produce vaccines and serums. Importation of foreign made drugs and supplies is handicapped. The urgency of coordination of all medical and public health resources has been stressed by Surgeon General Thomas Parran.

A few of the prominent health problems involved in a program of national defense are as follows:

1. The recruiting of professional personnel.
2. Provision of the manufacture and storage of sufficient medical and sanitary supplies, vaccines and serums.
3. The provision and maintenance of adequate medical service to the civilian population.
4. The careful planning of measures to combat those diseases known to be

particularly hazardous to troop concentrations.

5. Provision of research service in practical problems peculiar to war operations.

Planning for Delaware has begun. It is to be noted that Dr. W. H. Speer has been named Chairman of the Delaware Committee on Medical Preparedness by the American Medical Association. Dr. Speer is also a member of our State Board of Health, and thus is familiar with medical and public health problems throughout the State. We take this opportunity to offer the services and cooperation of the Delaware public health administration to the State Committee on Medical Preparedness.

### THE CRIPPLED CHILDREN'S SERVICE OF THE STATE BOARD OF HEALTH

MARY M. KLAES, R. N.\*

Dover, Del.

The General Assembly in 1937 passed a law which designated the State Board of Health as the official agency to serve the indigent crippled children of the state. The law does not confine "crippling" or "indigent". For the present, and as a matter of administrative policy, the term cripple is limited to "orthopedic cripple." The policy of determining indigence on an individual case basis is being followed. The Crippled Children's Service is directed by Dr. Floyd I. Hudson.

In compliance with the requirements of the Federal Children's Bureau a crippled children's register is maintained at headquarters in Dover. The name of every crippled person under twenty-one years of age, in the state, whose condition has been diagnosed by a licensed physician is placed on this register. Through the state diagnostic clinics and through the cooperation of family physicians, public health nurses, hospital records, and the school census, constant additions are being made to the register.

Diagnostic clinics are held monthly in the rural areas and are in charge of Dr. Irvine M. Flinn. Prescribed braces and other appliances are paid for by non-official agencies when the parents are unable to assume the

cost: The Alfred I. du Pont Institute of the Nemours Foundation, the local committees of the National Foundation for Infantile Paralysis, and local service clubs.

The public health nurse's part in the program has as its objectives: case finding, follow-up care, and the prevention of crippling defects. They incorporate their work with crippled children into their generalized nursing service. The nurses make home visits to the children who have been seen in the diagnostic clinics. Through their interpretation of the orthopedic surgeon's recommendations the very important parental cooperation is frequently obtained. When necessary the nurses also arrange with local lay committees for the transportation of children and their parents to clinics and hospitals. Follow-up care in the home is given by the nurses to patients who have been discharged from the hospitals. When making visits to the homes of infants, pre-school children, and to schools, the public health nurses have opportunities for finding and referring for treatment those slight deviations from the normal which would lead to crippling if left untreated.

The nurses' work with crippled children is under the direction of the crippled children's nursing consultant who arranges for the staff nurses in-service training relative to the crippled children's nursing program.

The Crippled Children's Service is indebted to physicians, hospitals, service clubs, and individuals for their cooperation.

### AN ESTIMATE OF THE ADEQUACY OF PRENATAL DIETS IN WILMINGTON

CHARLOTTE SPENCER\*

Dover, Delaware

Seventy-five records of one day-diets of prenatal clinic patients were collected by the Visiting Nurses Association of Wilmington during the month of February, 1940, and analyzed for protein, calories, calcium, phosphorus, iron, vitamins A, B, ascorbic acid, and D.

This estimate was undertaken to study in what way the food consumption of these women compares with our estimates of what they need, and to reveal where the greatest

\*Crippled Children's Nursing Consultant, Delaware State Board of Health.

\*Nutritionist, Delaware State Board of Health.



teaching emphasis on normal nutrition during pregnancy needs to be laid.

Of these seventy-five women, two were three months pregnant, eight were four months, four were five months, eleven were six months, twenty-four were seven months, fourteen were eight months, and twelve were nine months.

According to our information, the physician had advised special diet precautions for eight of these women, and these precautions were in the nature of restriction in starches and carbohydrates or fluid intake.

The table used for the calculations was Bowes and Church, "Food Values of Portions Commonly Used."

Minimum requirements for pregnancy were taken from the 1939 Yearbook of Agriculture. The standards taken were 2400 calories, 100 grams of protein, 1.5 grams of calcium, 1.3 grams of phosphorus, 18 mg. of iron, 9000 international units of vitamin A, 600 international units of vitamin B, 80 mg. ascorbic acid, and 300 international units of vitamin D.

The nurses checked the families income as adequate, near indigent, and indigent.

There was no case even in the adequate income group where all of the minimum requirements were met.

99% of all cases were calculated to be low in protein.

75% were calculated to have less than 2400 calories. Since this calculation is probably the least accurate, due to omission of cooking fat and gravy, it may not be at all significant.

97% were low in calcium and 77% in phosphorus. Forty-seven out of the seventy-

five had at least one glass of milk and twenty-eight had at least two glasses. Only three had four glasses. Only five had cheese. Evaporated milk, except for coffee or tea, was not mentioned at all.

97% were low in iron. Twenty-five had at least one egg, fifteen had a green leafy vegetable, and only four had liver. Only nineteen used any whole grain cereal or bread.

67% were low in vitamin A. No one mentioned using oleo as a butter substitute. More milk, more cheese, and more green leafy and yellow vegetables would have helped this vitamin. Two were taking vitamin A supplements.

76% were low in vitamin B. Whole grain cereals would have helped to make good this deficiency in an economical way. Only one was taking additional vitamin B in a supplement.

31% were low in vitamin C. This figure is probably too low since the highest possible vitamin C content was calculated for each food and this does not allow for stale or poorly cooked food.

95% were low in vitamin D. Since this study was done in February, there was probably little vitamin D secured from the action of the sun. Only one was taking additional vitamin D. One other had been advised to do so by her physician, but had not started as yet.

The average amount of protein, calories, calcium, phosphorus, and iron was tabulated for the white and the colored on the three levels of income, adequate, near indigent, and indigent. In each case the colored group

AVERAGE AMOUNT OF PROTEIN, CALORIES, CALCIUM, PHOSPHORUS, AND IRON

Group	Color	No.	Aver. gms. Protein	Aver. Cal.	Aver. gms. Calcium	Aver. gms. Phos.	Aver. mgm. Iron
Adequate Income	White	18	61.2	1776	.756	1.155	13.05
	Colored	6	96.0	2749	1.116	1.615	17.11
Near Indigent Income	White	17	41.1	1395	.479	.807	9.07
	Colored	13	56.8	1644	.767	1.084	11.03
Indigent Income	White	6	38.4	1322	.455	.684	7.78
	Colored	15	54.6	1524	.566	1.093	10.13

was much more adequately fed than the corresponding white group.

Many of these families could have purchased a well balanced diet for the same cost if their money had been well spent. Expensive cuts of meat, vegetables, and cereals were more commonly used than many of the more economical ones. We concluded that these women need assistance particularly in buying and meal planning.

### THE PRESCHOOL ROUND-UP

MARGARET H. JEFFREYS, R. D. H.\*  
Dover, Delaware

The Preschool Round-Up had its inception less than twenty years ago, and of interest is the fact that it was promoted by a lay organization—The National Congress of Parents and Teachers. This group realized that effort was being made everywhere to promote good health among school children but almost nothing was being done for the child about to enter school.

The ensuing years have witnessed widespread interest in almost every state and especially Delaware whose preschool round-up has been a yearly activity of the State Board of Health since 1931. At first, all efforts were concentrated upon the state schools where our own staff was available for service. In the past two years, however, with the aid of outside physicians, nurses and dental hygienists, we have been able to include Wilmington which makes the program state-wide.

We prepare for the round-up early in March, when letters are sent to the principal or teacher explaining the round-up and requesting that the parents be notified of the day and hour specified for the examination. Copies of the letter are sent to the State Health Chairman of the Parent-Teacher Association and to health chairmen of the local groups. Every effort is made to publicize the program.

The examinations are as complete as working conditions permit and include the usual requirements for a complete physical examination. A history card which accompanies

the child through elementary school is used and upon this all defects are recorded. For the purpose of record a simple grading system is used. "A" indicates the absence of a defect; "B", defect very slight; "C", need for attention; and "D", serious. No case is ever diagnosed by a member of the staff; but all cases recorded "C" or "D" are referred to the family physician or dentist. An exception is made in the case of dental defects. Here it is obvious that any defect should be corrected and the earlier the better.

During the summer the parents of children with defects are visited by a nurse or dental hygienist even though many parents are present at the time of examination. This is definitely a part of our educational program. We find that where parents are loathe to discuss personal affairs in school, they are willing to do so at home and not infrequently, on such a visit another real public health problem is brought to light.

As in the beginning, the Parent-Teacher Association has remained in readiness each year to cooperate in any way. Following the policy laid down by the National Congress they seek out the eligible children. Transportation for those parents of children who have no means of conveyance is arranged for by a special committee. Frequently they take those children to the school whose parents are otherwise occupied. Lastly, they assist financially, in whole or in part as the case demands, those unable to pay for the service that is necessary.

But not all communities have a Parent-Teacher Association so other sources of assistance must be found for those who are needy. Individual physicians and dentists are always ready to assist in doing their part. The State Dental Society this year is giving dental care to a large number of children, and of course through the hospitals medical and some dental care is available.

There is a growing interest in this program. This year the nurses and dental hygienists found upon their preliminary visits to the home, many who had gone to the family physician or dentist and some with

\*Director, Oral Hygiene, Delaware State Board of Health.

the defects corrected. Everywhere is found a consciousness on the part of the parents to have their children as physically fit as possible.

As yet, it is impossible to measure all the benefits to be derived from such a program. Only this may be said—it is basically sound and thus far, the only measure that has been effective in arousing the public to a sense of responsibility for the child ready to enter school. While it is entirely possible that many children receive attention apart from that offered by the State Board of Health, our yearly physical examination of first grade children indicates that many hundred receive no attention at all.

The highest premium should be placed on health and, particularly, a child's health. Ideally, periodic examinations should be made from birth, but until such a time may the preschool round-up continue to function.

### ARE WE PREPARED

GRACE T. MURRAY, R. N.\*  
Dover, Del.

The success of a public health nursing program depends upon the personnel who are to carry it out. This in turn depends not only upon their personality, but also upon their adequate professional preparation.

The study of the preparation and performance of public health nurses indicates that if the nurse is to carry out the functions of public health nursing, provision must be made for adequate preparation through every educational avenue that can be used and developed, including preliminary education, curricula in schools of nursing, special programs of study in public health nursing, educational services within the agency, and self education.

An organization is dependent not only upon progressive leadership but on the qualifications, attitudes, and interests of all of the members of its staff. There has been a natural tendency for persons long in service particularly those in staff positions to settle back in the harness, doing the day to day work but losing the drive and initiative often

brought to a job by the newcomer who looks to the future.

If a health department is to maintain its efficiency, deliberate steps must be taken to counteract the unchanging and unthinking routine, to broaden horizons of interest, to establish the desire to mold the future of our profession, and to instill enthusiasms which mean a ready and willing acceptance of change when change means more effective work.

Health teaching to patient, family, and community is an essential part of the work of the public health nurse. She, therefore, reads her professional journals and the available medical journals, and takes university extension courses, all in a desire to keep in touch with the present-day authoritative information in order that her teaching may be based upon scientific facts and present-day knowledge.

As a health teacher the nurse is expected to impart to the public the simple principles of healthy living upon which the prevention of illness so largely depends. Simply repeating the rules of personal hygiene is not enough. They must be made so appealing and understandable that a desire will be created to practice them in the daily life.

A program for continuous staff education is essential if the staff is to be kept intelligently informed of new discoveries and of developments in the rules of healthful living and the prevention and care of disease. Staff education is helpful in improving the quality of performance of the individual nurse and in aiding her to integrate her work with that of other agencies in the community.

The results to be expected from a public health nursing service are better public understanding of the whole health movement, more people brought to medical attention, protection of lives of mothers and babies, increased number of children immunized against communicable diseases, better hygiene and sanitation in homes, greater interest of parents in the correction of physical defects of children, and deeper understanding by parents of the importance of emotional factors in the mental and physical development of the child.

In working with physicians and with others

\*Assistant Director, Public Health Nursing, Delaware State Board of Health.



outside of her organization a public health nurse must be adaptable. She will meet with varied types of men and women, but to all she must accord a true loyalty. In her relation with physicians, the nurse must be informed of the rules governing professional ethics, and then by a true spirit of cooperation try not only to get help for her own work but to give her help freely to the work of others, seeking only the common end, better health for everyone.

### BOOK REVIEWS

Clinical Diabetes Mellitus and Hyperinsulinism. By Russell M. Wilder, Professor of Medicine, University of Minnesota. Pp. 459, with 19 illustrations. Cloth. Price, \$6.00. Philadelphia: W. B. Saunders Company, 1940.

Dr. Wilder's text successfully compresses into a relatively small volume a clear and critical resume of all that is known clinically about diabetes—symptoms, chemistry, diagnosis, and treatment. In treatment he stresses the maintenance of normal nutrition, and outlines how this, (the proper amount of calories, vitamins and minerals) may be maintained. The complications, whose recognition and proper treatment are as important as the diabetes itself, are carefully discussed. In this connection he takes issue with Joslin as to the disadvantages of alkali in treating coma, and recommends its use.

The last two of the twenty-six chapters are devoted to a discussion of hyperinsulinism and its treatment. The appendix contains the usual tables of food values, standard diets, etc., and a food nomogram.

The liberal use of footnotes adds to the value and completeness of the work. The indices are excellent. Written in a slightly terse but entertaining style, here is a book with whose contents all physicians should be familiar.

Simplified Diabetic Manual. By Abraham Rudy, M. D., Instructor of Medicine, Tufts College Medical School. Pp. 216. Cloth. Price, \$2.00. New York: M. Barrows & Company, Inc., 1940.

A very up-to-date, clearly expressed manual, consisting of two parts and an appendix, covering the latest diet forms, protamine-zinc-insulin, and other new developments, presented very simply and soundly in English that the patient can understand. The chapters on "Personal Hygiene" and "The Feet in Diabetes" are very well presented. A special feature is the diet section, which contains recipes for native American, French, German, Italian, etc., dishes so that normal food habits can more easily be followed.

This is an excellent guide book, and is recommended to the patient.

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\*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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# 1789—MEDICAL SOCIETY OF DELAWARE—1940

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### NEW CASTLE COUNTY MEDICAL SOCIETY—1940

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Board of Directors: C. E. Wagner, 1940; C. L. Hudiburg, 1940; Lewis Booker, 1940; L. J. Jones, 1941; N. W. Voss, 1942.

Board of Censors: D. T. Davidson, 1940; O. S. Allen, 1941; J. A. Shapiro, 1942.

Program Committee: B. M. Allen, C. E. Wagner, C. L. Hudiburg.

Legislation Committee: W. H. Speer, G. W. Vaughn, J. M. Barsky.

Membership Committee: A. J. Strikol, L. B. Flinn, Grace Swinburne.

Necrology Committee: E. R. Miller, R. R. Tybout, J. R. Downes.

Nomination Committee: Lewis Booker, L. J. Jones, N. W. Voss.

Audits Committee: J. W. Butler, E. M. Bohan, O. N. Stern.

Public Relations Committee: Ira Burns, W. M. Pierson, J. A. Giles, R. A. Lynch.

Medical Economics Committee: W. E. Bird, L. J. Rigney, F. A. Hemsath, J. C. Pierson, B. S. Vallett.

### KENT COUNTY MEDICAL SOCIETY—1940

#### Meets the First Wednesday

J. B. BAKER, President, Milford.  
 I. W. MAYERBERG, Vice-President, Dover.  
 B. F. BURTON, Jr., Secretary-Treasurer, Dover.  
 Delegates: A. V. Gilliland, J. R. Beck, H. V. P. Wilson.  
 Alternates: C. J. Prickett, S. M. D. Marshall, L. L. Fitchett.  
 Censors: S. M. D. Marshall, R. W. Comesges, Wm. Marshall Jr.

### DELAWARE ACADEMY OF MEDICINE—1940

Open 10 A. M. to 5 P. M. and Meeting Evenings

LEWIS B. FLINN, President.  
 W. F. PRESTON, First Vice-President.  
 J. C. PIERSON, Second Vice-President.  
 W. F. PRESTON, Secretary.  
 W. H. KRAEMER, Treasurer.  
 Board of Directors: S. D. Townsend, C. M. A. Stine, W. S. Carpenter, H. F. du Pont, A. L. Bailey, Mrs. Ernest du Pont, W. P. Allen, J. K. Garrigues.

### DELAWARE PHARMACEUTICAL SOCIETY—1940

ALBERT DOUGHERTY and HARRY S. KIGER, Honorary Presidents, Wilmington.  
 WILLIAM F. LONGENDYKE, President, Seaford.

HUGHETT K. MCDANIEL, First Vice President, Dover.

EDWARD J. ELLIOTT, Second Vice President, Bridgeville.

PAUL C. TIGUE, Third Vice President, Wilmington.

ALBERT BUNIN, Secretary, Wilmington.

ALBERT DOUGHERTY, Treasurer, Wilmington.

Board of Directors: W. F. Longendyke, Seaford; W. E. Brown, Wilmington; H. P. Jones, Smyrna; G. W. Brittingham, Wilmington; A. H. Morris, Lewes.

Legislation Committee: Thomas Donaldson, Chairman, Wilmington.

### SUSSEX COUNTY MEDICAL SOCIETY—1940

#### Meets the Second Thursday

G. M. VAN VALKENBURGH, President, Georgetown.  
 CARLTON FOOKS, Vice President, Frankford.  
 F. I. HUDSON, Secretary-Treasurer, Rehoboth Beach.  
 Delegates: G. V. Wood, H. E. LeCates, A. C. Smoot, G. M. Van Valkenburgh.  
 Alternates: C. M. Moyer, E. L. Stambaugh, J. R. Elliott, F. I. Hudson.  
 Censors: H. E. LeCates, Bruce Barnes, A. C. Smoot.

### DELAWARE STATE BOARD OF HEALTH—1940

Stanley Worden, M. D., President, Dover; Mrs. Charles Warner, Vice-President, Wilmington; Bruce Barnes, M. D., Secretary, Seaford; W. H. Speer, M. D., Wilmington; Dr. J. D. Niles, Townsend, Del.; J. F. Maguire, D. D. S., Wilmington; Mrs. Elizabeth H. Martin, Lewes; Mrs. Caroline Hughes, Middletown; Edwin Cameron, M. D., Exec. Sec'y., Dover.

### DELAWARE STATE DENTAL SOCIETY—1940

J. R. EMORY, President, Harrington.  
 A. GORMAN, First Vice-Pres., Wilmington.

W. H. POWELL, Second Vice-Pres., Wilmington.

J. A. BOUNDS, Secretary, Laurel.

F. M. HOOPES, Treasurer, Wilmington.

E. E. VEAKEY, Librarian, Wilmington.

Delegate to A. D. A.: P. A. Traynor, Wilmington.

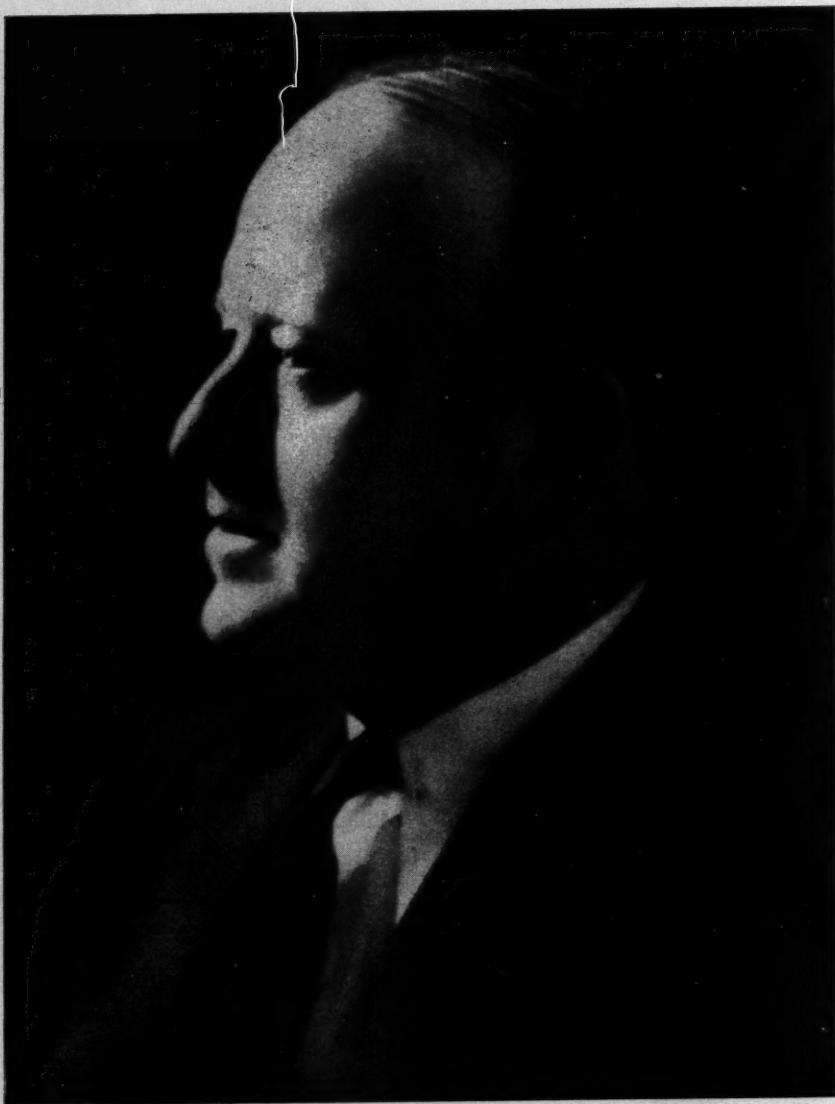
### MEDICAL COUNCIL OF DELAWARE

Hon. Daniel J. Layton, President;

J. S. McDaniel, M. D.; W. W. Johnson, M. D.

### BOARD OF EXAMINERS, MEDICAL SOCIETY OF DELAWARE

J. S. McDaniel, President and Secretary; Wm. Marshall, Assistant Secretary; T. H. Davies, O. S. Allen, W. E. Bird.



**BRUCE BARNES, M. D.**  
PRESIDENT of the MEDICAL SOCIETY of DELAWARE  
**1940**